

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

## PCT

WRITTEN OPINION  
(PCT Rule 66)

To:

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FFR 06.2004

**ASHIDA & KIMURA**

Date of mailing  
(day/month/year)

02.02.2004

Applicant's or agent's file reference  
02F065-PCT

**REPLY DUE**

**within 2 month(s)**  
from the above date of mailing

International application No.  
PCT/JP 03/00161

International filing date (day/month/year)  
10.01.2003

Priority date (day/month/year)  
11.01.2002

International Patent Classification (IPC) or both national classification and IPC  
H02M3/335

Applicant  
SANKEN ELECTRIC CO., LTD.

1. This written opinion is the <sup>second</sup> **first** drawn up by this International Preliminary Examining Authority.
2. This opinion contains indications relating to the following items:
  - I ☒ Basis of the opinion
  - II ☐ Priority
  - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - IV ☐ Lack of unity of invention
  - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - VI ☐ Certain documents cited
  - VII ☐ Certain defects in the international application
  - VIII ☐ Certain observations on the international application
3. The applicant is hereby **invited to reply** to this opinion.
 

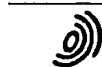
**When?** See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

**How?** By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

**Also:** For an additional opportunity to submit amendments, see Rule 66.4.  
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.  
For an informal communication with the examiner, see Rule 66.6.

**If no reply is filed,** the international preliminary examination report will be established on the basis of this opinion.
4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 11.05.2004

Name and mailing address of the international preliminary examining authority:



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## I. Basis of the opinion

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed"*):

## Description, Pages

1-21 as originally filed

## Claims, Numbers

1-11 received on 08.12.2003 with letter of 05.12.2003

## Drawings, Sheets

1/9-9/9 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

5. ☐ This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

6. Additional observations, if necessary:

**V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims	
Inventive step (IS)	Claims	1-11
Industrial applicability (IA)	Claims	

**2. Citations and explanations****see separate sheet**

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following document:

D1: US-A-5689407

The present international application does not fulfil the requirements of Article 33(3) PCT because claim 1 is not inventive.

**Identification of prior art D1**

1. Document D1 (Fig. 1) which is considered the closest prior art for claim 1 discloses a power source apparatus comprising:

- a conversion circuit (2a, 1, S1, T, D2, 2b) which performs conversion of an input voltage (Vdc) into an output voltage (Vo2) different from the input voltage; and a driving power source (Cs) which is charged with the input voltage to drive said conversion circuit, wherein:

- in a case where a standby signal is not supplied from outside, said conversion circuit starts the conversion when a voltage of said driving source power source rises a **turn-on voltage Von**, stops the conversion when the voltage of said driving power source lowers to a **first turn-off voltage Voffn**, and performs the conversion so that the output voltage may be stabilised at a predetermined value (Vo2);

- in a case where the standby signal is supplied from outside, said conversion circuit performs the conversion so that the output may be stabilized at equal or lower than a predetermined second value which is lower than the predetermined first value, by starting the conversion when a voltage of said driving power source rises to the **same turn-on voltage Von** and by stopping the conversion when the voltage of said driving power source lowers to a **second turn-off voltage Voffs**, that is lower than the first Turn-off voltage. Therefore the level at which the switch S1 starts oscillation is the **same level Von** in standby mode and in normal mode, on the other hand the level at which the switching element S1 stops oscillation is **Voffn** in normal mode and **Voffs** in standby mode (feature A).

Thus subject-matter of claim 1 although new in the sense of Article 33(2) PCT can not be considered inventive for the reasoning explained in paragraph 2.

2. Subject-matter of claim 1 differs from document D1 only in the fact that turn-off voltage  $V_{ccoff}$  keeps the same value during normal mode and standby, on the other hand the turn on voltage  $V_{con}$  assumes two different value in normal mode ( $V_{con_1}$ ) and standby mode ( $V_{con_2}$ ) (feature B).

2.1 From document D1 is clear that feature A provides "a less fluctuant DC voltage to a load, even in standby" (see D1, column 5, line 18-26 and column 15, line 32-34) by decreasing the difference  $\Delta$ , between the turn-on level and the turn off level (see D1, column 15, line 16-36) as in the application (see page 4, line 7-8). In document D1 the difference  $\Delta_A = V_{on} - V_{offs}$  (see D1, fig. 7a) is reduced by fixing the turn-off voltage level during standby larger the turn-off voltage during normal mode (feature A), while in the application the difference  $\Delta_B = V_{con_2} - V_{ccoff}$  (fig. 6) is reduced by fixing the turn on voltage during the standby mode smaller than during normal mode.

The man skilled in the art confronted with the task of reducing voltage fluctuation in standby mode, would use document D1 which teaches to reduce the difference  $\Delta$ . For the skilled person it is clear that any equivalent way to reduce such difference  $\Delta$  other than feature A would be applicable to obtain such Dc voltage with reduced fluctuations. For the skilled person feature B is a straightforward alternative to feature A for reducing  $\Delta$ .

Therefore the skilled man would arrive to the subject-matter of claim 1, without involve an inventive activity.

Thus the subject-matter of claim 1 is not inventive in the sense of article 33(3) PCT.

3. At the present stage it seems that remaining dependent claims 2-11 also don't add any new or inventive special technical features, so that such claims don't comply with Article 33(2) and/or 33(3) PCT.